

CLAIMS

1. A color filter with a retardation layer comprising:
a base material;

a coloring layer formed on the base material, with light transmissive patterns having different thicknesses according to each color formed in a plurality of rows

a first retardation layer formed on the coloring layer, made of a liquid crystalline polymer, having an optical axis perpendicular to a plane of the base material so as to function as a C plate; and

a second retardation layer formed on a side opposite to a side with the coloring layer of the base material formed, or between the base material and the coloring layer, having an optical axis parallel to the plane of the base material so as to function as a positive A plate having a positive refractive index anisotropy,

characterized in that a refractive index anisotropy of the second retardation layer in a visible light range becomes smaller with a shorter wavelength.

2. The color filter with a retardation layer according to claim 1, characterized in that a total of a thickness of the coloring layer and a thickness of the first retardation layer is constant, and the thickness of the first retardation layer differs according to a thickness of the light transmissive pattern.

3. The color filter with a retardation layer according to claim 1 or 2, characterized in that the coloring layer comprises the light transmissive patterns of three colors including red, green and blue, and thicknesses of the light transmissive patterns for the three colors are provided in an order of red > green > blue.

4. The color filter with a retardation layer according to claim 1 or 2, characterized in that the coloring layer comprises the light transmissive patterns of three colors including red, green and blue, and thicknesses of the light transmissive patterns for the three colors may be provided in an order of blue > green > red.

5. A liquid crystal display comprising:

a first polarizing plate and a second polarizing plate with absorption axes provided orthogonal with each other;

a color filter comprising a base material, a coloring layer formed on the base material, with light transmissive patterns having different thicknesses according to each color formed in a plurality of rows, a first retardation layer formed on the coloring layer, made of a liquid crystalline polymer, having an optical axis perpendicular to a plane of the base material so as to function as a C plate, provided between the first polarizing plate and the second polarizing plate;

a second retardation layer, having an optical axis parallel to the plane of the base material so as to function as a positive

A plate having a positive refractive index anisotropy; and
a liquid crystal layer,

characterized in that the first polarizing plate, the second retardation layer, the first retardation layer and the second polarizing plate are formed in this order such that the optical axis of the second retardation layer and an absorption axis of the first polarizing plate are disposed substantially perpendicularly, and a refractive index anisotropy of the second retardation layer in a visible light range becomes smaller with a shorter wavelength.

6. The liquid crystal display according to claim 5, characterized in that the liquid crystal layer is formed between the color filter and the second polarizing plate, and the second retardation layer is formed on a side opposite to a side with the coloring layer of the base material of the color filter formed, or between the base material of the color filter and the coloring layer.

7. The liquid crystal display according to claim 5, characterized in that the liquid crystal layer is formed between the second retardation layer and the color filter.

8. The liquid crystal display according to any one of claims 5 to 7, characterized in that a total of a thickness of the coloring layer and a thickness of the first retardation layer is constant, and the thickness of the first retardation layer differs according

to a thickness of the light transmissive pattern.

9. The liquid crystal display according to any one of claims 5 to 8, characterized in that the coloring layer comprises the light transmissive patterns of three colors including red, green and blue, and thicknesses of the light transmissive patterns for the three colors are provided in an order of red > green > blue.

10. The liquid crystal display according to any one of claims 5 to 8, characterized in that the coloring layer comprises the light transmissive patterns of three colors including red, green and blue, and thicknesses of the light transmissive patterns for the three colors are provided in an order of blue > green > red.